MONTANA GREENHOUSE GAS PROJECT:
Building a Foundation for an Action Plan

EXECUTIVE SUMMARY
(December 1999)

DRAFT

Montana Department of Environmental Quality
1520 E. Sixth Avenue
Helena, MT 59620
406-444-6697
grnhouse@state.mt.us

EXECUTIVE SUMMARY

"Greenhouse gases" influence the climate by slowing the loss of heat back into space. Most scientists now believe that human activities emit enough greenhouse gases to noticeably alter the climate. Carbon dioxide from fossil fuel use is the primary, but not the only, greenhouse gas added by humans. The current scientific recognition that climate change is a serious possibility is not matched by a public or political acceptance of the need for comprehensive action, or even necessarily by an understanding of what the options are.

The Montana Department of Environmental Quality (DEQ) undertook this project to provide the information that individuals, businesses and government will need before acting to reduce greenhouse gas emissions. For the most part, the project report analyzes issues that many Montanans already are concerned about for reasons separate from that of reducing greenhouse gases. For instance, helping homeowners reduce their energy bills or changing government regulations that favor urban sprawl, both of which can lead to lower greenhouse gas emissions, already have some support.

It is likely that Montanans will be doing something in the coming years to reduce greenhouse gas emissions. The much publicized doubts about climate science and Congressional opposition to international treaties on greenhouse gases should not obscure the fact that businesses at home and abroad, as well as other governments, already are moving to address global climate change. Montana should be prepared to respond to national and international initiatives. Twenty-four other states have completed or are working on their own greenhouse gas action plans. By having this report, Montana will be better equipped to evaluate and influence proposals on climate change.

The *Montana Greenhouse Gas Project* is only a first step. Montana will not have an official plan without informed public debate. Now, most members of the public and most policy makers have only a vague notion of what preventing climate change might mean to them and what actions they should take. The project report presents detailed analyses of specific issues, which should focus the public debate. With that focus, Montanans should be better able to choose what they must do to reduce greenhouse gas emissions. Realistically, taking actions based on the analyses presented here would reduce, not eliminate, the threat of climate change. But debate over alternatives must start somewhere, or else there never will be legislative action, business plans, or widespread personal commitments to reduce greenhouse gas emissions.

The evidence for human-induced climate change is accumulating but is complicated and largely statistical in nature. The most widely reported evidence comes from computerized models, which, while still evolving, are increasingly accurate. The improvement during the last decade of models forecasting El Niño/La Niña events, simpler but still complex climatic events, indicates the progress being made. Closer to home, research done at the University of Montana indicates spring is arriving earlier in northern latitudes, which could seriously affect forests and other natural ecosystems. Non-statistical, easily visible evidence, such as the receding of glaciers in Glacier Park,

clearly shows that climate change of some kind is occurring; more sophisticated analyses suggest greenhouse gases from human activities may be the cause.
In spite of uncertainties, a scientific consensus is emerging. Scientists agree that the atmospheric concentrations of greenhouse gases such as carbon dioxide, methane, nitrous oxide and perfluorocarbons are increasing. The concentration of carbon dioxide alone has increased 30 percent since 1850. There is general agreement that the global climate appears to be changing. Most scientists accept a link between the two changes. In 1995, the Intergovernmental Panel on Climate Change (IPCC), a group of scientists from around the world, stated, "For the first time the balance of evidence suggests there is a discernible human influence on the earth's climate, or to put it another way, the changing climate over the last 100 years cannot be explained by natural variability alone." Research since then has done more to strengthen this conclusion than to weaken it.

Many people and businesses, as well as certain foreign governments, remain unpersuaded. Their concerns could be dismissed as similar to the now-discredited objections raised against early suggestions that the ozone layer was being destroyed. However, a more positive reply to climate change skeptics is that given in May 1997, by John Browne, the chief executive officer of British Petroleum (now BP Amoco):

> *The time to consider the policy dimensions of climate change is not when the link between greenhouse gases and climate change is conclusively proven, but when the possibility cannot be discounted and is taken seriously by the society of which we are part. We in BP have reached that point.*

The science is increasingly persuasive. The likelihood of a national initiative is growing. Montanans should be concerned with practical questions about the economic and social consequences of programs chosen to reduce greenhouse gas emissions. Montanans ought to be prepared to participate constructively in the national debate.

Reducing greenhouse gas emissions is both simple and complex. It's simple in that what must be done is easily summarized:

- use fossil fuel more efficiently,
- use alternatives to fossil fuel, and
- generate fewer waste products in industrial and agricultural processes.

However, the on-going efforts by individuals, businesses and governments to accomplish these ends, albeit for reasons other than controlling greenhouse gas emissions, shows just how complex the task will be. The answers may require rethinking and replacing existing methods and technology. We must find the ways and the will to do more than we have done in the past.
Yet, the sheer magnitude of the idea of climate change, and the seriousness of the possible consequences can cause people and politicians to shy away from direct actions.

Emissions in Montana, as in other states, can be divided into those associated with industrial processes (such as aluminum production, oil refining, electricity generation)

and those associated with more dispersed uses (such as residential heating, commercial lighting, driving cars). DEQ already has prepared an inventory of greenhouse gas emissions in Montana. While, as one might expect, the big industrial facilities are major emitters, other smaller sources have significant cumulative emissions. For instance, the transportation sector accounts for one-fifth of all inventoried emissions in Montana. Even our everyday activities are major emitters. Common activities, such as heating houses, lighting commercial buildings, and driving back and forth in town, collectively account for 15-20 percent of emissions.

Greenhouse gas emissions are intertwined with almost every aspect of society. Actions that reduce greenhouse gas emissions also generally reduce emissions of pollutants that are dangerous to health. The U.S. Environmental Protection Agency (EPA) estimates that 85 percent of greenhouse gas emissions nationally come from sources that already are directly regulated under the Clean Air Act. DEQ hopes to encourage practices that speak both to immediate environmental problems and to long-term climate change.

The report covers a wide range of areas. DEQ believes that action in any of these areas would have benefits that extend beyond greenhouse gas issues. DEQ concentrated on market-based alternatives, ones that don't prohibit greenhouse gas emissions, but which do make behavior that reduces greenhouse gas emissions more economically attractive. Some of the more significant areas covered include:

- Highway expenses currently paid through property taxes could be shifted to fuel taxes to give drivers a better idea of the true cost of driving. The change would mean no net increase in taxes, but would reduce the driving that drivers themselves think has the least value.
- The state could search for alternatives to those government requirements that hinder the development of compact, mixed-use and pedestrian friendly urban areas. State and local road design standards, model zoning codes and septic tank requirements are just some examples of regulations and practices that presently can encourage driving and discourage alternatives.
- The restructuring of the electric utility industry could be extended by including the way transmission line use is priced and by decontrolling customer metering and billing. These changes will make the actual cost of electricity more visible, and therefore show how energy efficiency investments are more attractive.
- A carbon tax would make less carbon-intensive activities more attractive and could be used to reduce the net tax burden on most Montanans. However, it is a complicated and contentious issue that would require study before adoption could be considered.

The project report discusses numerous other issues related to greenhouse gas emissions. It also discusses ideas that have been suggested at the national level, but which are not appropriate in Montana. The project report *does not* call for a net increase in taxes. It does show that raising some taxes while lowering others would reduce subsidies—and thereby reduce interest in—activities that emit greenhouse gases and other pollutants. Those losing their subsides may question raising the issue while those seeing their taxes lowered may support the discussion. Overall, reducing subsidies could improve the efficiency of the Montana economy while improving the environment.

The project report does not set a specific legislative agenda. DEQ believes more discussion is necessary before such an agenda can be set. Many of the possible actions may eventually be taken because they make sense in their own right, and not for reasons having to do with climate change. At this point, the only action unique to climate change that DEQ proposes to take is to help protect Montanans who voluntarily act to reduce greenhouse gas emissions. This action could take the form of implementing a state registry of voluntary actions, as New Hampshire already has done (see p.**Error! Bookmark not defined.**), to ensure those actions will be recognized whenever national requirements for reductions are established. Beyond that, DEQ will encourage Montanans to develop an understanding and a consensus on actions to reduce greenhouse gas emissions.

The project report is to be used as a background and reference document. Certain sections, especially those dealing with the greenhouse gas science and policy, have extensive footnotes and Internet links. They are designed to aid those seeking more detailed information on a particular topic. These references also show the significant and systematic efforts that have been made on the science of climate change. While disagreements remain, both on the science and on the proper response, there is an extensive body of literature and thoughtful analysis of the problem.

Links are indicated in the text by an underline. Appendix 1 contains a list of all the links, for those who are reading a hard copy of the report. Unless otherwise noted, all links are to sites that are not part of DEQ; DEQ has no control over their content or availability. Some sites cannot be reached through Word with some browsers. If you have problems, copy the link into your browser and try it directly. All the links were operational as of November 1, 1999.